



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,852	10/30/2003	David C. Holmes	508.1.015-016	9766

7590 02/10/2006

WATOV & KIPNES, P.C.  
P.O. Box 247  
Princeton Junction, NJ 08550

EXAMINER
----------

DRYDEN, MATTHEW DUTTON

ART UNIT	PAPER NUMBER
----------	--------------

3736

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/697,852	<b>Applicant(s)</b> HOLMES, DAVID C.	
	<b>Examiner</b> Matthew D. Dryden	<b>Art Unit</b> 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/27/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities: the word cord is spelled incorrectly on line 2 of page 2 in the specification, the word -with- should replace the word "which" on line 11 on page 13, lines 24 -2 on pages 24 and 25 are confusing, especially line 1 on page 25, and thus it is unclear what the means for reversible locking of the second arm segment to the motion segment unit is.

Appropriate correction is required.

### ***Claim Objections***

Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 13 recites the same limitation of claim 2, both of these claims refer back to only claim 1 so claim 13 fails to further limit the subject matter.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 and 12-20 are rejected under 35 U.S.C. 103(a) as being obvious over Sherwin (3750652) in view of Brown et al (4899761). Sherwin discloses the claimed invention except for the device comprising the motor means specifically disclosed in the specification, which is a stepper motor. Sherwin discloses: a collar assembly (see around element 25 in Figure 1) fixedly secured to a motor means (element 24 in Figure 1), a screw means operatively engaged to the motor means that extends through the collar assembly (see around elements 22 and 23), a pair of arms (elements 11 and 12 Figure 1), with two portions for each arm (first portions can be seen around elements 37 and 39 and the second portions can be seen around elements 11 and 12 in Figure 1), a pivot collar assembly (around element 15 in Figure 1), wherein rotation of the screw causes the pivot collar assembly to move along the screw means causing the first and second arm segments to move relative to each other whereby the remote ends of the arms move away from each other to provide a controllable force on adjacent portions of a motion segment unit and toward each other to release. Brown et al teach that it is known to provide a distractor arm assembly with a stepper motor to separate adjacent vertebrae of a motion segment unit of the spine at a constant rate of distraction (see abstract and Column 6, lines 55-6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Sherwin with a motor means for applying a controllable force, that consists specifically of a stepper motor, as taught by Brown et al, to separate adjacent vertebrae of a motion segment unit of the spine at a constant rate of distraction.

Regarding claims 3 and 4, Sherwin discloses a device that has motion segment unit contacting devices secured to the remote ends of the arms and these devices consist of pins (See Figure 1 around element 44).

Regarding claims 5 and 6, Sherwin discloses the claimed invention except for the device comprising a means for measuring resistance to the force applied by the motor means to the distractor arm assembly and this means being a load cell or strain gauge. Brown et al teaches a distractor arm assembly that includes a strain gauge for measuring the resistance to the force applied by the motor means, to allow for analysis of the values and allows the user to determine if surgery is needed based on the translated stability or instability correlations (see Columns 3-4, lines 67-16). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Sherwin with a strain gauge that measured the resistance applied by the motor means, as taught by

Regarding claim 8, the screw of Sherwin can be viewed as a jackscrew.

Regarding claim 9, Sherwin discloses the claimed invention except for the device comprising means for releasing the distractor arm assembly from the motor means. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the device of Sherwin with a means for releasing the distractor arm from the motor means to allow the distractor arms to be used without the stepper motor, many distractor arms exist in the art without a stepper motor and these arms are used for performing surgery in the spine or fixing the spine in a certain place, for example the patent to Middleton.

Regarding claim 10, Sherwin discloses the claimed invention except for the device comprising means for rotatably connecting one of the said arm segments to the collar assembly. The specification says it is connected to the collar by a screw, a bolt or the like, and the patent to Sherwin attaches an arm to the collar via a pin, (element 16 in Figure 1), which can be viewed as or the like however the arm is not rotatably attached. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make one of the arms of Sherman rotatably attached to increase the range of motion of the arm and the device for accessing more motion segments of the spine.

Regarding claims 14, Sherwin discloses the claimed invention except for the device comprising a detection means for measuring the resistance of the pair of arms to the distraction and a translating means to receive the output signal and interpreting it into usable data. Brown et al teaches it is known to provide a distractor arm assembly with a detection means (strain gauge) and a translator for converting the data into usable data (see Columns 5-6, lines 57-14), so that these values obtained from the measurements can be used to compare the spinal values of the current patient with a normal patient for diagnosing. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Sherwin with a detection means for measuring the resistance of the pair of arms to the distraction and a translating means to receive the output signal and interpreting it into usable data, as taught by Brown et al, so that the values obtained from the measurements can be used

Art Unit: 3736

to compare the spinal values of the current patient with a normal patient and proper diagnosing can be conducted.

Regarding claim 15-17, the lower portion of arms 11 and 12 can be viewed as legs, (see down around elements 44 and 43 in Figure 1), and the remote ends of the legs comprise a motion segment unit engaging assembly, that includes a pin (see element 44 in Figure 1).

Regarding claims 18-20, Sherwin discloses the claimed method steps except for the controllable force generating data corresponding to a characteristic of the motion segment unit and the characteristic of the motion segment unit being stiffness. Brown et al teaches a distractor arm assembly that measures the stiffness of the spine using data generated by the controllable force and strain gauge (see Column 4 lines 32-58), to allow for further analysis of the spine and to determine a proper diagnosis and treatment for the patient. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Sherwin with a method step comprising the steps of the controllable force generating data corresponding to a characteristic of the motion segment unit and the characteristic of the motion segment unit being stiffness, as taught by Brown et al, to allow for further analysis of the spine and to determine a proper diagnosis and treatment for the patient.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sherwin in view of Brown et al as applied to claim 3 above, and further in view of Middleton (5899901). It is unclear what the applicant is using for the means for reversible locking the second arm segment to the motion segment unit contacting device, the specification

Art Unit: 3736

does not clearly state what the means for is. Sherwin as modified discloses the claimed invention except for the second arm segment comprising means for reversible locking the second arm segment to the motion segment unit contacting device. Middle teaches it is known to provide a pin on the end of two arms (see around elements 102 and 104 in Figure 18) that comprise a screw means that is capable of reversibly locking the second arm segment to the pins (see Columns 7-8, lines 51-16), so that the pin stays locked onto the spinal fixation system and makes sure contact is maintained between the spine and the contact device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Sherwin with a second arm segment comprising means for reversible locking the second arm segment to the motion segment unit contacting device, as taught by Middleton, so that the pin stays locked onto the spinal fixation system and makes sure contact is maintained between the spine and the contact device.

### ***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 5,059,194 Michelson discloses a cervical distractor

U.S. Pat. No. 5,308,357 Lichtman discloses a handle mechanism for manual instruments

U.S. Pat. No. 6,716,218 Holmes et al disclose an instrument for bone distraction and compression having ratcheting tips.



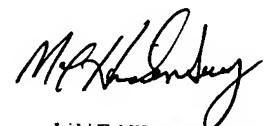
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Dryden whose telephone number is (571) 272-6266. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571) 272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MDD

  
MAX HINDENBURG  
PATENT EXAMINER  
EBC CENTER 3700